

AMERICAN VETERINARY REVIEW,

SEPTEMBER, 1886.

EDITORIAL.

CANKER OF THE FOOT—its pathology yet in doubt—Plasse and Megnin were the first to consider it produced by micro-organisms—Prof. Nocard is inclined to be of the same opinion—a valuable case on record—after a period of eight months standing, the disease is radically cured in a few hours—solution of bichloride of mercury the best antiseptic—the treatment ought to be tried. LESIONS OF THE STOMACH IN RELATION TO THE DIAGNOSIS OF RABIES—almost all the other lesions doubtful on account of their vague appearance, and some because of their absence—the stomach is the organ most commonly the seat of characteristic lesions—its contents take precedence over everything else—it is the only reliable indication of the affection—Prof. Axe's experience—the result of post-mortems made in twenty-two typical cases. REGULATING THE PRACTICE OF VETERINARY MEDICINE IN FRANCE—more empirics in that country than in any other—various attempts made near the General Government—they always failed. England has succeeded—so has New York State—new bill presented to the French Government—it gives recognition to self-made practitioners of five years practice under an examination clause—Article III of the bill interesting to foreign veterinarians—a wise measure against American degrees. POLYURIA AS A MEANS OF DIAGNOSIS OF TUBERCULOSIS IN THE HORSE—natural tuberculosis may exist in the horse—acknowledged error made by Prof. Nocard—pulmonary lymphadema—polyuria observed in six cases of tuberculosis out of eight—it may, it is sufficient to make a diagnosis—reports on record confirming the same. NATIONAL VETERINARY ASSOCIATION OF GREAT BRITAIN—the fourth annual meeting—interesting papers read during the two days that it lasted. HOG CHOLERA—Dr. Billings is appointed to investigate it in Nebraska—his inquiries to farmers—to veterinary surgeons. ANTHRAX—Inoculation the prophylactic treatment—why is it that American practitioners ignore it—Dr. Faust, of Poughkeepsie, the first to try it. UNITED STATES VETERINARY MEDICAL ASSOCIATION—the next annual meeting on the third Tuesday of September. PRIZES OF THE U. S. V. M. ASSOCIATION AND OF THE REVIEW—another paper.

CANKER OF THE FOOT is an affection concerning the nature of which pathologists generally do not yet seem able to agree. But there are some facts in its history which leave no room for doubt or disagreement regarding the tenacity of the disease,

its rebellious character, and its resistance to all forms of treatment. Taking into consideration its modes of appearance and the methods of its progress; its facility of development in an apparently healthy hoof; its metastatic character, shown in its disappearance from one foot only to be transferred to another, and its return to the same foot again, or its appearance in a different one; and principally, the characters revealed by microscopic examination, of the discharge, and of the pathological structures of a foot thus affected—the theory of Plasse and Megnin was for some time accepted as the correct one, and it was adjudged a place in the classification of parasitic affections. Professor Nocard, of Alfort, has recently made some observations in the same direction, and while he is not yet prepared to definitely settle the question, he reports amongst his cases one especially, of a very interesting character, which in its results would seem quite confirmatory of the theory of micro-organism. In this case a valuable stallion had been for more than eight months suffering with canker of the right fore foot. The lacunæ of the frogs and the sole was extensively diseased, the walls being undermined to a large extent on the outside quarter and outside toe. In fact, the disease had become so extended that the animal was quite unfitted for any kind of work by his excessive lameness. Practitioners are aware that, as a rule, canker, even when extensive, is seldom accompanied with lameness, and that it is only present when the tissues are largely diseased. The treatment followed by Prof. Nocard at his clinic was very simple, and was followed by such excellent results that it certainly recommends itself to the practitioner.

“The foot being well pared, and the diseased structures well exposed, the animal was then secured in the stocks, with his right fore foot raised and tied up. Then an atomized spray was thrown with force, forming a vapor of a solution of bichloride of mercury one part in one thousand (Van Svietten’s fluid). This was kept up continuously for two and a half hours. Waiting then for about fifteen minutes, to allow the parts to dry, the dressing was concluded with the application for about ten minutes, of a powder of idoformed ether, made with the hand. The animal was

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then returned to his stall without shoe or dressing. During eight days he received forty grammes (about nine drachms) of Fowler's solution in his food. That was all the treatment. Recovery was radical."

As far as our personal experience in a city practice goes, and so far as we have been able to ascertain, canker is not a very common affection with us. But taking into consideration the fact of its possible existence to a serious extent in cities where hygienic conditions are not well followed, we have thought that the presentation of this case might prove to be of advantage to our readers, hoping, also, that some of them might be induced to give the treatment a trial, and to favor us with a report of the results.

LESIONS OF THE STOMACH IN RELATION TO THE DIAGNOSIS OF RABIES.—The importance of the lesions or abnormalities found at the post-mortem examinations of rabid animals which had not been seen during life, cannot be denied. Indeed, it is acknowledged that the observation of whatever changes may be found in the internal structures of the cadaver are, in fact, the surest means of the confirmation of a correct diagnosis. In some few diseases the post-mortem lesions are very often vague and of doubtful importance, or obscure, and not uncommonly absent. This is especially the case in those forms of disease which are classified amongst nervous disorders, though more on account of their peculiar manifestations than of their pathological lesions, as far at least as ordinary observation by the naked eye extends. These lesions, however, are easily rendered evident by microscopic examinations. The natural and important inference to be derived from this condition is the lesson it should teach of the error of overlooking the value of those lesions when their existence is ascertained.

Rabies is perhaps of all diseases the one to which these remarks most emphatically apply; for every one knows how few positive lesions can be depended upon in the diagnosis of this malady in the cadaver of the dog. One lesion in particular, however, has been so commonly found, and its presence so generally recognized by all writers on this subject, as well as by all careful

observers, that it has been admitted and established as almost a pathognomonic lesion of rabies. We are referring now to the condition of the stomach, and to the presence of foreign bodies within its walls. To quote the language of Prof. J. Axe, of London: "As an aid to diagnosis, indeed, the contents of this organ take precedence over everything else, and constitute the only reliable indication of the affection which a post mortem examination affords." In *The Veterinarian*, Prof. Axe relates his experience in the post mortem inspection of not less than two hundred dogs, and in relation to the value, in the diagnosis of rabies, of the lesions found in their stomachs, relates the following as the description of the contents and condition of that organ in twenty-two well marked cases of the disorder:

"1. Portions of straw; two fragments of linen rag; no food; mucous layer coated with thick tenacious mucus, and somewhat hyperæmic.

"2. Pieces of wood shavings; a small quantity of sawdust, and a piece of bone; no food.

"3. A little grass and straw, and a small particle of coal. Mucous membrane intensely hyperæmic towards the pyloric extremity, and slightly so over two or three inches of the duodenum.

"4. Fragments of stick and some fibres of cocoa matting; a small quantity of semi-digested fat; no other food. Mucous membrane healthy.

"5. Grass, straw and horse excrement; no food; general hyperæmia of the mucous layer, with scattered ecchymoses along the summits of the folds.

"6. Straw, hairs, and portions of newspapers; about an ounce of tendinous tissue in a semi-digested state; no other aliment; patchy hyperæmia around pylorus; membrane coated with thick mucous and croupy exudate.

"7. Straw, splinters of wood, some wool, and a stone; no food; mucous membrane normal.

"8. Earth, portions of rushes, and a few hairs; no food; blood blotches and ecchymoses distributed over the entire mucous surface, with several small areas of necrosis.

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" 9. Straw, dog's excrement, and a small portion of woollen cloth; two fragments of bone, and about one ounce of semi-digested flesh; mucous layer slightly reddened and covered with thick opaque mucous.

" 10. Cocoa matting; wool; no food; lining of membrane generally hyperæmic, especially marked near the pylorus.

" 11. Straw; horse excrement; no food; mucous layer healthy.

" 12. Earth and grass; no food; slightly hyperæmic towards the pylorus; linear hæmorrhage along the summits of gastric folds.

" 13. Straw and portions of cabbage leaf; no food; mucous membrane normal.

" 14. Fragments of stick, some hair, very small quantity of semi-digested bread; dense blood; blotches and foci of hæmorrhagic necrosis.

" 15. Straw; no food; petechial spots along summits of mucous folds.

" 16. Feathers and hay; no food; mucous layer normal.

" 17. Straw and some semi-digested paper; no food; mucous membrane healthy.

" 18. Stomach empty; lining of membrane coated with tenacious mucus; slight œdema and congestion.

" 19. Horse excrement and dead leaves; no food; no perceptible vascular change.

" 20. Straw, fragments of wood and a small nail; no food; mucous layer generally hyperæmic.

21. Straw, dog's excrement, and a portion of the claw of a fowl; no food; mucous membrane studded over with minute points of capillary hæmorrhage.

" 22. Wool, fibre of door-matting, and small piece of leather; no food; mucous membrane not perceptibly altered."

REGULATING THE PRACTICE OF VETERINARY MEDICINE IN FRANCE.—The complaints and protests of regular veterinarians against the unrestrained freedom with which incompetent persons are permitted to practice veterinary medicine, and to assume the titles belonging properly to none but duly qualified practitioners,

have been more numerous and emphatic amongst the scientific veterinarians of France than those of any other nation. The mother-land of veterinary science; the country where the first veterinary school was established; it is yet, within her limits, probably, that quackery most extensively flourishes and imposters most numerous abound. While her large cities may be free from empirics, the smaller towns and country districts are crowded with these parasites of the profession. Educated and accomplished veterinary surgeons have time and again complained of this disgraceful state of things, which allows ignorance and presumption to compete with skill and experience. Veterinary societies, veterinary schools and veterinary journals have in many instances called the attention of the government to the subject and persistent demands have been made for a law for the regulation of the practice of veterinary medicine. No attention, however, has yet been paid to the general complaint, and the condition continues unchanged to-day.

England has been for many years in the same condition, and while she may not be as free from empirical pretenders as she might, the practice of veterinary medicine is, we believe, nevertheless favored with quite a fair amount of protective regulation, and the title of Veterinary Surgeon, and the standing of the regularly educated practitioner well vindicated by the uniform degree granted to the graduates of the various schools. This, it is known, has been accomplished in England by the recognition she has been obliged to grant to practitioners who, though not graduated, had been in practice for a stated number of years. Unless we misunderstand the law of England, it now prohibits the assumption of the title of Veterinary Surgeon by any person not registered as a regular member of the Royal College of Veterinary Surgeons.

Though organized veterinary medicine in America is still but a youthful institution, our qualified graduates have for some time realized the necessity of obtaining some protective legislation, by which their status might be recognized and established, and efforts have been made in several States at various times, to obtain from their respective Legislatures the enactment of suitable laws on the

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subject. The Legislature of New York, it is known, has been the first to move effectively, and the law which was passed last spring has dealt to quackery in the Excelsior State the first blow which dooms it to extinction.

The *Recueil de Medecine Vétérinaire* brings us the news that France is again attempting to effect the reform which its friends have so often failed to obtain. A bill has been introduced in the Assembly by which, if it is enacted, veterinary medicine will be in that country, as in our own State, a well regulated interest, with duly protected graduates. Amongst the various sections of the bill the first two define the results to be obtained. They read as follows:

"Art. 1.—In a year from the passage of this act, the practice of veterinary medicine will not be allowed except by those who shall hold a diploma of veterinary surgeon granted by one of the National Veterinary Schools of France.

"Art. 2.—All those that without diplomas have treated animals for five years at least, and by this fact are registered as such, shall, within a year from the passage of the present act, give evidence of their professional knowledge before a committee appointed by the Minister of Agriculture, which shall be composed of at least two veterinarians and one agriculturist, and . . . those who shall have passed satisfactory examinations shall be allowed to continue to practice in their respective localities."

When this law is passed our French confreres will have improved upon our work, though the result will still be the same. Our past experience excites our fear lest the second article should meet with much objection, and it would not surprise us to learn that, as with us, the examination clause had caused the defeat of the bill.

Art. 3 of the bill treats of a subject to which our American graduates will not be indifferent. It says: "Veterinarians holding a foreign diploma shall not be allowed to practice in France without the authorization of the Minister of Agriculture. This shall be granted; 1st, on the request of the applicant and the presentation of his diploma; 2d This diploma

"must be recognized as possessing the same guarantees as those granted by the French schools; 3d Reciprocity of recognition must exist, either with the Government from which the diploma is granted, or with the nationality of the applicant."

This last clause of Article 3 warns the foreign schools that the education they furnish to their graduates must be good and thorough; and it may also be recognized as betraying the influence of the impression heretofore made by certain spurious diploma mills, especially those of America; a sad reminiscence of some of the work done by the McClure institutions and their like, some years ago.

POLYURIA AS A MEANS OF DIAGNOSIS OF TUBERCULOSIS IN THE HORSE.—Though for a long time the name of tubercle has been applied to certain lesions of the respiratory or digestive apparatus of solipeds, it is but recently that it has been established that true tuberculosis may exist in the horse also. The bacillus of Koch having been discovered by Trasbot and Nocard during their post mortem investigations, the demonstration became complete of the possibility of *natural* tuberculosis in animals of that species. The discovery of this bacillus in these lesions furnished Professor Nocard with an opportunity to change his mind in respect to the nature of an affection which he had described some years previously, and which he attributed to disease of the lymphatic structures, which he had called pulmonary lymphadenia in his pamphlet on leucocythemia. Resuming the study of this disease, though no longer under the name he had before given to it, but under its true and the more proper denomination of tuberculosis, he noticed that six out of eight of the animals which he had under observation were affected with a certain peculiar symptom which he thinks is of great importance when one considers that very often great difficulty is met in discovering the lesion which gives rise, during life, to the serious manifestations that are presented by the patient. "This symptom is an abundant polyuria, which lasts for several weeks, and which no doubt plays an important part in the rapid loss of condition of the patient. The quantity of urine passed is sometimes double, treble, or even quadruple the normal amount. The proportion of

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urea contained in it is considerably increased, and uric acid, which is generally lacking in the urine of herbivorous animals, exists in quite large proportions; while hippuric acid, ordinarily so abundant, is reduced to an insignificant quantity, or quite disappears. This, Professor Nocard considers, is of great importance in diagnosis, and he ventures so far as to say that there need be no hesitation in making one of tuberculous phthisis, when with the *polyuria* there is also a total absence of pulmonary, cardiac, intestinal or renal disturbance sufficient to explain the distressing condition of the patient.

Since the publication of this statement by Professor Nocard, other veterinarians have printed records of cases where this symptom, carefully observed, had been sufficient to determine a diagnosis which was confirmed by the post mortem.

NATIONAL VETERINARY ASSOCIATION OF GREAT BRITAIN.—A few years ago a National Veterinary Association was organized in Great Britain, uniting under one head and in a single body the veterinarians of England, Scotland and Ireland, and forming a sort of congress, similar to our United States Veterinary Medical Association. We have been kindly furnished with concise reports of the fourth annual meeting of this body, which was held on the 22d and 23d of July, and we reprint them in this issue, with the hope that some good may result to our readers from a study of the proceedings. The address, which was delivered by Professor Walley, was followed by the reading of scientific papers. Mr. J. S. Hurndall, of Liverpool, considered the question, "Can experimental pathogenesis be rendered useful in elucidating a definite system of veterinary practice?" The essay of Professor McFaydeau, of the Royal Veterinary College, was on "The micro-parasites of the domestic animals," which excited a great deal of personal feeling. On the second day Mr. W. Hunting, of London, read an essay on "Lameness in horses," and Professor W. O. Williams, of Edinburgh, with Mr. R. Roberts, of Kendal, one on "Anæsthetics and anæsthesia in relation to veterinary practice." Some minor subjects, of less interest, closed this fourth meeting, which was followed by a pleasant social reception in the City Chambers.

HOG CHOLERA continues to prevail more or less extensively throughout the country, Nebraska especially losing largely by it yearly. The Regents of the University of Nebraska have appointed Dr. Billings to investigate the disease in that State, and a series of questions has been prepared to be submitted to the farmers for information on the subject. Why not appeal to veterinarians at large for the expression of their views? We give the questions below, to which answers can and ought to be given, not only from Nebraska, but from every portion of the country where the disease prevails and has been observed by veterinary surgeons:

1. How many hogs did you raise in 1885?
2. Did you have hog cholera in 1885?
3. How many hogs did you lose from it in 1885?
4. What was their market value at the time of death?
5. What breed were the diseased hogs?
6. Have you noticed that any one breed of hogs was more likely to acquire hog cholera than another, and which?
7. Are rough, native hogs more susceptible to hog cholera than the improved breeds?
8. At what season of the year was your loss the greatest?
9. Please state your opinion as to the effect of hot and cold, wet and dry seasons on outbreaks of hog cholera, especially with regard to severity?
10. Have you noticed that high or low breeds have any effect upon outbreaks of hog cholera—that is, does it appear earlier in the season or with more severity in hogs kept on high, dry land than on the low and wet?
11. Have you any ideas as to how the disease got into your herd?
12. Do you think that there is but one disease known as hog cholera, or several; if the last, please give your practical reasons for thinking so?
13. Did you have hog cholera in your herd in 1884?
14. Were your hogs kept in the same place in 1885 as those of 1884, and did they have disease in 1885?

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15. Have you observed that sex or age exerted any influence for or against hog cholera?

16. Do you know anything surely as to whether hogs that have had cholera will again have it the next year if again in the herd, if allowed to live?

ANTHRAX.—INOCULATION THE PROPHYLACTIC TREATMENT.—

The veterinary (?) columns of our agricultural papers have been largely occupied of late with the subject of anthrax, and many urgent inquiries and anxious suggestions have been propounded touching the best course to be adopted for the protection and preservation of such cattle as may be threatened or have been attacked by any of the forms of that disease, and reports are published, more or less reliable, of its appearance more or less extensively in several States of the Union. These facts should excite no surprise, for the state of things now existing is but a repetition of the experience of other years at seasons corresponding with the present.

There is, however, much that is surprising in the recommendations and suggestions of many of the writers who have dealt with the subject in the agricultural papers—which, nevertheless, we do not intend specifically to criticize.

We do not wish to disparage the wisdom or to ignore the benefits that may be derived from some of the modes of treatment that are thus recommended, but in admitting that they have in some instances been followed by success, there is no doubt that in the majority of cases they have not only failed to cure, but have never succeeded in preventing the extension of the disease. It is an acknowledged fact, and has been for years established beyond doubt, that there is but one right way to deal with the various forms of anthrax, that there is but one means of checking its diffusion, and that is by *inoculation*. We have frequently called the attention of our readers to the value of the prophylactic treatment, but our warnings have been ignored or unheeded. Among the few who have put this sovereign measure successfully to the test, only Dr. Faust, of Poughkeepsie, so far has kindly furnished us with his report of the results he has obtained. Our limitations of space will not allow us to publish this month his report of his

experiments—the first, we believe, made on this continent,—but we may say that here, as well as abroad, the result has been a complete success. Animals inoculated by Chauveau's vaccine have all been protected from the disease, and it has been checked after having proved fatal to a number of animals. We shall publish the report of Dr. Faust as soon as possible. His example ought to be followed.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.—The next annual meeting of this large body of veterinarians is to take place, as we are informed by notification from the Secretary, published in our present issue, on the third Tuesday of this month.

The Comitia Minora will meet at 10 A. M., and the general meeting at 11 o'clock. We publish to-day a list of the officers of the Association for the current year.

The veterinary profession has assumed so important a position within the last few years in this country, that no doubt the gathering of such a large number of practitioners can hardly occur without greatly benefitting the community as well as affording pleasure and interest to the members. We hope to have a good report to print in our next issue.

PRIZES OF THE U. S. V. M. ASSOCIATION AND OF THE REVIEW.—We have at a late hour received a second paper for competition for the prizes offered by the United States Veterinary Medical Association and the AMERICAN VETERINARY REVIEW. At its next meeting the value of the two papers will be considered and decided, not only by the Committee on Prizes, but by the entire Association. The fact that the paper by "Incognitus," published in our July number, is on the same subject with that of "Lucidus Ordo," will give additional interest and pertinency to the comparison and competition of the work of the two contestants. This inauguration of a series of friendly literary tournaments gives good promise for the future of ambitious endeavor and persevering study by the younger members of our profession.

HOG CHOLERA (?) prevails as usual in many States.

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ORIGINAL ARTICLES.

PARTURIENT APOPLEXY.

A paper on the essential nature of Parturient Apoplexy in the cow, respectfully submitted in competition for the AMERICAN VETERINARY REVIEW Prize.

BY LUCIDUS ORDO.

The necessities of successful therapeutics in veterinary medicine demand a more accurate knowledge than we have hitherto possessed regarding the etiological and pathological relations of disease. The revelations of post-mortem investigations throw, perhaps, the only direct light upon the pathogenesis of disease. All else is essentially empirical. In animals, as in man, the processes of life and death involve the same factors. The acceptance of any belief which does not embrace this doctrine so far disqualifies the veterinarian for skillful and scientific practice. Seen in its integrity, comprehended in its fullness, nature is a unit. What we see are only the infinite phases of expression which she embodies. Emerson has well said "All science has one aim, namely, to find a theory of nature. A true theory will be its own evidence. Its test is that it will explain all phenomena." Let us approach the discussion of our subject with something of the spirit of the Concord philosopher. Let us see if the present state of science does not offer a comprehensive explanation of that morbid state which is designated in the cow "parturient apoplexy." There has been much wild speculation during the past half century regarding the essential nature of this disorder. As might be supposed the tendency has been in the direction of accepting the hyperæmic or congestive theory as sufficient to explain the phenomena of the malady. This hypothesis strikes the unthinking mind with great favor. But like many other theories it will not explain the facts as they present themselves for interpretation.

While, unquestionably, congestion sometimes does take place and even hemorrhage into the cerebrum, it still is not the factor which makes up the pathogenic entity of parturient apoplexy.

Nor does the theory first announced by Lever (in relation to puerperal eclampsia in women) account either for the phenomena of this disease in the human being or in the cow. The evidence is as strong against this hypothesis as in its favor. Statistics show that a very little more than 50 per cent. of the human beings affected with albuminuria during pregnancy become the victims of parturient eclampsia. The relation then between the eclampsia and the albuminuria, to say the least, is very uncertain, and the phenomena of albuminous urine are absent in perhaps most cases of eclampsia. We can find in the hydrasmic condition of the blood of the pregnant state a predisposing factor to eclampsia, but unless this is very intense it is not in itself sufficient to provoke the disease. The theory of Traube and Rosenstein accounts for the phenomena of parturient apoplexy in this way, and it has the support of much experimental investigation. McDonald advances the theory that the phenomena of parturient eclampsia arise from cerebro-spinal anaemia induced by irritation of the vaso-motor center from the retention of excrementitious matter in the blood. This theory, like the former one, has much to commend it, but it also fails to explain everything. I apprehend that to comprehend fully the physiological and pathological processes which are involved in the production of the disease we must disentangle the subject from the many perplexing elements which have been forced into it, and perhaps we may do a good service in declaring that the old notion regarding congestion of the brain being the essential underlying factor in the causation of the malady has been exploded in the more recent revelations of science. The keynote to puerperal apoplexy in the cow, as in the human subject, is found in the peculiar excitability of the nervous system of pregnancy. *Puerperal apoplexy* is a bad name. It too readily conveys the conception of congestion or actual effusion or real hemorrhage, pathological states which are not associated with the puerperal eclamptic condition except in very rare cases. How do we account for the coma which characterizes typhus and typhoid? Not upon any theory of congestion. What was the *simple apoplexy* of earlier writers, and why did they denominate it simple or nervous apoplexy? For

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the reason that post-mortem examinations indicated no adequate cause of death. McDonald has published the results of several post-mortems made in the case of women who died in puerperal eclampsia, and found the nerve centers in a condition of extreme anæmia, while the meninges were somewhat congested. I have myself made several autopsies upon cows that died with the same history, and in every example the brain was found bloodless. I may remark at this point that in what is usually called impaction of the stomach, where death results, post-mortem shows a similar appearance of the brain substance. I have verified this in a number of instances and regard the essential pathological condition one of anæmia. Linking together the theories of Traube and Rosenstein and McDonald and Tyler Smith, we may evolve from the whole an hypothesis founded in science and competent to explain every phenomena of the disorder. By the phrase parturient apoplexy I wish to express the conception of a morbid state of the cerebro-spinal centers induced by primary irritation of the reproductive system. The same phenomena may ensue upon irritation originating in the gastro-intestinal and urinary systems, but for the purposes of this paper it will suffice to discuss only (except in an incidental way) the genito-urinary system as starting points for this affection. In recent times the studies of the pathology of the ganglionic nervous system have thrown much light upon these complex questions of parturient pathology. The phenomena of motor disturbance and sense aberration arise both from centric and eccentric causes. Conceding this proposition, which is attested by ample clinical experience, the question arises, what is the *modus operandi* of these phenomena? We are not much aided in this explanation by the written or unwritten pathology of the past. Empiricism and traditions afford the only ground stones to build upon. Writers of veterinary pathology have contributed but little to the elucidation of this subject. Medical text-books and journals abound in statements which are not warranted by the researches of science, nor supported by the logic of analogy. The conflicting opinions still entertained regarding its essential nature evidence the fact that it requires the light of additional study thrown upon it to bring it within the

range of intelligible comprehension. The names it has received are misleading and deceptive and inevitably defeat the ends of scientific veterinary medicine. Most writers upon the subject of parturient apoplexy ascribe it to plethora and indigestion from over-stimulation and want of exercise, with subsequent derangement of the sympathetic nervous system, followed by congestion of the brain and apoplexy. Cerebral congestion is an heirloom of a departed pathology. Cases in which the pronounced symptoms of apoplexy in the parturient cow can be ascribed to active congestion are few. It has been truthfully said that congestion of the brain as well as impaction of the stomach is a ready diagnostic refuge, seductive in its simplicity, and pleasing in its preciseness, easily affirmed, and not easily disproved, (Gowers.) The discovery of the vaso-motor system of nerves, showing us that the circulation, secretions and general nutrition of the tissues are under the control of special nerves—(vaso-constrictors and vaso-dilators and trophic nerves)—enables us to understand something of the loss of function that results from what we call irritation.

Claude Bernard has shown that the loss of consciousness due to anæsthesia from chloroform is absolutely analagous to what takes place when the sensory nerves succumb to abstraction of blood, or that troubles of sensibility manifest themselves at the periphery. Excessive and prolonged irritation depresses the vaso-motor centers and relaxes the vessels (Bartholow). When this occurs there is stagnation of blood in the abdominal vessels. When this paralytic relaxation passes certain limits, the abdominal vessels are capable of holding the whole of the blood in motion. Thus is explained the paleness of the eyes and visible mucous membranes, the coldness of the head, horns and extremities, the unequal distribution of the surplus heat of the trunk, the subnormal temperature, the coma and paralysis. When the lesions are of a destructive kind, depression of the trophic centers, as well as the vaso-motor centers, ensues. When the brain is suddenly deprived of blood, one effect is often to cause convulsions. Thus the first result of failing functions may be the liberation of energy. These considerations enable us to under-

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stand something of the secondary effects of irritation. It may not only cause over-activity of nerve-elements; it may lessen their activity and even arrest it altogether. The same stimulus in different degrees will either arrest or produce reflex action (Gower). If irritation can produce the symptoms of congestion at one time and of anæmia at another, it remains to be explained how this is done. It will assist us in our consideration of the morbid conditions of the cerebro-spinal centers that follow reflex stimulations by keeping in mind that the circulation is directly under the control of the nervous system, and of the organs contained in the abdominal cavity. We should not, in this connection, lose sight of the amount of stimulus necessary. A moderate degree of irritability of the end organs of the sensory nerves contained in the mucous-membrane—not too violent and long-continued, stimulates the vaso-motor centers in the medulla, causing a general contraction in the arterioles. When this irritation reaches a sufficient degree of intensity, the walls of the abdomen and of the hollow organs contained in the abdominal cavity enter also into contraction, followed by increased blood pressure in the vessels least provided with muscular fibres. The blood vessels of the brain, from their anatomical peculiarity, are an exception to this law. Thus is explained the elevation of the temperature of the mouth, head and horns, the hurried respiration, the accelerated pulse, the early loss of the power of vision, and the spasmodic contraction of the muscles; thus may be developed delirium and convulsions, and loss of voluntary power. When we take into consideration the clinical history of parturient apoplexy, and also its post mortem appearances, the conclusion is irresistible that it cannot be due to congestion. Ante-mortem congestion sufficient to give rise to symptoms similar to or identical with those of parturient apoplexy can be demonstrated post-mortem.

If there is no evidence after death of hyperamia having existed during life, does not the hyperamic theory fall for want of proof? The symptomatology of congestion, at best, is vague, and it will not satisfy the scientific enquirer to be answered that these are the phenomena of congestion.

Perhaps in the present state of knowledge it is not always easy to differentiate this condition from the opposite one of anæmia, but when the keen edge of the dissecting knife discloses the actual condition, we are forced into conviction, and must admit that where all the evidence of anæmia are present, the condition must exist. This is arriving at a conclusion by that very rigid process of reasoning known as a deduction by exclusion. That congestion is the undulying factor in parturient apoplexy is a pure fancy, which derives its best life from the traditional opinions that die with a great struggle always. The study of the functions of the nervous system can offer the only rational and scientific solution to the various problems which grow out of these disorders. The question of the intimate nature of parturient apoplexy is not so much a question of quantity in blood, as it is a question of innutrition and irritation. With enlarged views touching these elements of the disease our conceptions of rational therapeutics will be broadened greatly.

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

NEW COMPLICATIONS OF CASTRATION—SEQUELÆ IN OPERATION ON A MONORCHID.

BY ROBT. WEIR, D.V.S., House Surgeon.

I say complications of castration, for it is not uncommon to hear persons who have not the least idea of the structure of the parts upon which they operate, boast of their ability to perform this simple operation. The following case has been a victim to such a one:

The owner of a bay stallion, two years of age, wished to have him castrated; the services of a gelder were obtained and the operation began. The right testicle only was to be found in the scrotum; this was removed, and then began the dead search for the left one. An incision of several inches was made in the perineal region about eight or nine inches below the anus; in so doing, the penis was incised, the urethra perforated and divided

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right across, and the operation given up with the looked-for testicle still unfound. Nothing more was done until the expiration of two weeks, when Mr. Deronde, a student of veterinary medicine, was called to treat the case. He found that micturation was performed with difficulty, some urine making its exit through the end of the penis, while the greater part came out through the wound already made at the perineum. An attempt was made to pass a catheter, but when it had passed about nine inches into the penis it could be forced no farther.

The owner now decided to have the horse sent to the hospital for treatment, if any was possible. When admitted here the perineal wound had nearly closed, urination was nearly impossible, the urine escaped in only a very small stream that was said to have been constantly decreasing in size, and, when the urine passed, much pain was existing, shown by kicking, switching the tail, etc. Upon the preceding symptoms and history a diagnosis of stricture of the urethra was made. As there was yet an escape of a small quantity of urine from the end of the penis, it was thought possible that the stricture might be dilated by means of bougies until regaining its former size, but, notwithstanding the most careful and persistent efforts, nothing would pass the stricture. Had this closing of the urethra been in the free position of the penis it might have been removed by amputation of that part, but this neither could be done, for the abnormal stricture was located back of the reflection of the prepuce over the penis.

What was to be done? It was thought that possibly the stricture might be entered and dilated from behind, and to that effect urethrotomy was performed in the usual place, in the same manner, but with much difficulty in finding the urethra, though by the use of cocaine the operation was rendered entirely painless and the animal stood very quiet all the time. But no more success could be gained by entering the urethra in that way, and no information obtained except the fact that the stricture must have measured about one inch in thickness.

It was then thought to attempt to make a permanent artificial opening at the ischial arch, so that the colt might be allowed to micturate as mares do. To that effect the incision which had

been made to perform urethrotomy was enlarged and lengthened to be about four inches long, the mucous membrane of the urethra stitched to the skin on the edges of the wound by ten or twelve silk and catgut carbolized sutures. For a few days this seemed to be a success; the colt when urinating stretched himself like mares do, and the urine was thrown out in a good large stream. Toward the tenth day the sutures, however, gave way, the wound began to granulate and close by degrees. The last thing which was attempted was to deal directly with the stricture. To effect that a metallic catheter was introduced on one of the entrances of the urethra, while by the other was pushed the canula of a straight trocar. Both instruments were by external manipulation brought in opposition as near as possible and then the trocar was pushed into the canula cautiously, then through the cicatrix tissue of the urethra, trying to reach the end of the metallic catheter which was in the other portion of the urinary canal. Several attempts were made but failed, and as false passage would necessarily follow the failures, further treatment was abandoned and the owner decided to have him destroyed.

Previous to doing this the missing testicle was looked for by rectal examination. It was easily felt just at the inguinal ring and by slight manipulations pushed through the inguinal canal, when it arrived into the scrotal region. At the post mortem two abscesses were found on each side of the median line in the inguinal region in which the pus had a slight urinary smell. The scrotal region was the seat of an extensive yellowish serous infiltration. The penis being removed and put aside for dissection, the urethra was found cut right across, cicatricial tissue had formed which measured nearly one inch in thickness, and both cut ends of the canal were superposed, so to speak, in such a manner that what little track existed to allow the urine to escape described an S course through the stricture and between the upper and lower portions of the yet open urethra.

ANTHRAX.—It is said that murrain prevails in portions of Kansas and the Indian Territory, and many cattle have died from it.

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A LARGE FUNGOID GROWTH OF THE METATARSAL REGION OF SEVERAL MONTHS STANDING—FAILURE OF AMPUTATION—DISSECTION AND CAUTERIZATION—CONTROL OBTAINED BY PRESSURE WITH COMPRESSED SPONGES—ENTIRE RECOVERY.

By J. WALRATH, D.V.S., House Surgeon.

A bay filly three years of age, used as a running animal, and valued highly on account of the honors achieved on the racing track, had the misfortune to receive a cut from the heel of the shoe on the flexor tendons of the off hind leg, about midway between the tarsus and fetlock. Not much attention was given to it at the time, until after several days, when the leg began to swell and was becoming very sore to the touch. A veterinarian being called, prescribed poultices to the part, which were kept up for a considerable length of time; granulations in the meantime began to spring up, causing the wound to bulge out very much. His next step was to remove these with the knife, caustics, etc., and after treating the case for sometime without any improvement, another practitioner was engaged, who, meeting with no better result, was supplanted by a third, who, after attempting to dissect the growth out, and cut it from under the skin, found the granulations always returning and protruding, and then in turn gave the case up.

Such was the history given on her admission to the hospital, which took place on the 22d of April. The leg at this time was roundish in shape, being considerably swollen, especially in its middle portion. The wound was extremely vascular, covered by thick scabs and was discharging freely, being about three inches across its surface, and standing out nearly two inches, being situated slightly to the inside of the median line of the leg. The animal was very lame when moved, kept the leg constantly raised from the floor, as even the slightest amount of weight caused pain to the affected member. For the first two days the leg was poulticed with flaxseed between two pieces of fine muslin to remove the scabs, and when these had fallen off the wound was cauterized with nitrate of silver and dressed antiseptically with a solution of carbolic acid. No improvement being noticed, this form of dressing was discontinued, and simple cauterization

around the edges with nitrate of silver, and of the granulations with a saturated solution of chlo. zinc, with an oakum dressing placed over this, and held *firmly* in place by a ticking bandage. This was kept up for some time without any diminution in size, in fact, the fungus growth was spreading, and in some respects now resembling a mushroom.

On the first of May an elastic ligature was applied tightly around the now almost strangulated granulations. After three days the ligature had cut through all but a small pedicle, which was amputated with a knife, it being still dressed the same as before the ligation, with the exception that iodoform was powdered over the surface of the wound. The granulations in a short time commencing again to bulge, a second elastic ligature was placed around them, which amputated them so closely as to leave the edge of the ulcer lower than the surrounding skin and causing some hemorrhage. A small surgical sponge was now placed in the sore over which a pad of oakum was laid and the whole bandaged with linen and woolen, the sponge being replaced by a new one at every dressing, which took place every other day. But little improvement was noticed in the size of the wound, it remaining about the same. An ulcer now broke out on the anterior part of the leg over the bone, produced by the continued pressure of the bandages. To combat this now ugly complication a piece of "Russian felt" was moulded to fit the metatarsus on all sides except the back, a window being left in that part corresponding to the ulcer. The inside of this splint being padded with oakum, firm pressure was once more brought to bear over the growth, which was coated around the edges with collodion, cauterized with chlo. zinc, and covered by a *compressed sponge* the exact size of the ulcer, and kept in place by firm bandaging.

Under this treatment improvement began to take place and cicatricial tissue to form on the upper border. Great care had to be exercised in removing the sponges to prevent hemorrhage, which took place from the slightest cause; even raising the foot was sufficient to cause profuse bleeding. This form of dressing was continued for three weeks, at the end of which time the collodion was discontinued, its efficacy being no longer noticeable.

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On the 3d of July, through atmospheric change, she was taken with pneumonia of the left lung; her temperature rapidly went up to 105°, pulse 60, and respiration 36. Her appetite, which had been good since she entered, now became very poor, refusing everything but a little hay. She was immediately put under quinine, carb. amm. and alcoholic stimulants. Suffering considerably from thirst, she was allowed a plentiful supply of milk and eggs, together with oatmeal gruel, which she took with seeming relish. After some time her temperature gradually came down; stimulants and tonics were now prescribed in the form of nux vomica, gentian and capsicum, which aided in bringing about a complete recovery. During the nearly two weeks of her sickness, the dressings on the leg were allowed to go a longer time than usual without removal; sometimes remaining on as long as three and four days. Still the wound on the flexor tendons was gradually decreasing in size, the fungoid granulations which had given so much trouble being now fully under control. The edges were nicely cicatrized and the swelling became less every day. The wound on the front of the leg occasioned considerable trouble from its excessive sensibility, but became rapidly better upon the application of chlo. zinc and by loosening the pressure of the bandage, which were put on less tight as the swelling went down.

At length on the 2d of August (the filly had now been here about sixteen weeks) the wound looked so healthy that the sponge was discontinued and a small pad of oakum substituted in its place. During the time that has elapsed since this change a decided improvement is noticed at each dressing. The surfaces of both are now completely cicatrized. The lameness has entirely disappeared, and the swelling almost all gone.

PROBABLY GLANDERS.—It is reported that a fatal disease has broken out in Harrison county, Ind., among the horses. The symptoms are sore neck or throat, and a running at the nose.

TEXAS FEVER IN ILLINOIS.—It is reported that a disease, believed to be Texas fever, has broken out among cattle near Cantrall, in this State, and several have died from the effects of it.

EXTRACTS FROM FOREIGN VETERINARY PAPERS.

A NEEDLE IMPLANTED IN THE TONGUE.

BY VAN HUFFELEN.

A cow, whose appetite was poor and which presented a swelling of the inter-maxillary space, was treated by an empiric, who after a careless examination of the mouth had failed to discover any cause for the trouble, and prescribed for her astringent gargles, with poultices of clay and vinegar over the swelling.

No improvement being observed, the author was called, who in carefully exploring the mouth, found a needle implanted in the base of the tongue. Rapid recovery followed the extraction of the needle. This was the fifth time the author had met with a similar case.—*Bullet. Comité Consult. Belg.*

PERFORATION OF THE ŒSOPHAGUS IN THE THORACIC PORTION.

BY DELEEE.

The author was called to attend a cow suffering with tympanitis, and asked to perform the operation of Œsophagal catheterism, which had already been tried by the owner. He observed that the respiration was painful, and that the animal refused all food. Thorough examination revealed the fact that both pleural sacs were filled with serosity and that the left lung was the seat of extensive disease. The jugular vein was largely distended; the pulse was strong and quick; respiration was accelerated and painful, and locomotion weak and staggering. In this condition of things the owner was advised to have the animal destroyed. At the post-mortem, a laceration was found in the Œsophagus, at the entrance of the thorax, about five centimeters long (2 inches and a half), due to the passage of the probang.—*Ibid.*

PROLAPSUS OF THE RECTUM.

BY BRIL.

A hunting dog, seven months old, had an extensive prolapsus of the rectum. Having reduced it, an attempt was made to keep it in place by means of a cord placed around the anus like the

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string of a purse; but finding it returning, amputation was decided upon as the only means of removal. To effect this, interrupted sutures were placed around the intestines, at about one decimeter (five inches) from the anus, in such a manner that the edges of this organ could be brought in contact with the healthy intestines after the removal of the protruding portion. This being amputated, the parts were returned to their place without difficulty. A few days of low diet and laxative feeding were followed by rapid recovery.—*Ibid.*

INTESTINAL OBSTRUCTION BY STERCORAL MASSES.

By Mr. GODFRYN.

A mare, four years old, was in danger of dying from the intense suffering of severe colics, the result of intestinal obstruction, though nearly all indicated treatment had failed, such as tartar emetic, oily purgatives, drastics, etc. The tympanitis continuing to increase, and suffocation threatening, the puncture of the cœcum was performed and followed by the evacuation of abundant intestinal gases, which somewhat relieved her. Thirty grammes (one ounce) of aloes dissolved in alcohol was then administered through the canula of the trocar, and followed by rectal injections; and an hour later she was taken with violent expulsive efforts. These were succeeded by the evacuation of three large stercoral masses, one of which measured 10 centimeters in length and 28 in circumference. These were followed by active movements of the bowels, and the result was complete recovery in a few hours.—*Ibid.*

RUPTURE OF THE SPLEEN—ABDOMINAL HEMORRHAGE.

By Mr. CONARD.

A mare had been suffering with colics for nearly twenty-four hours when the author was called to see her. At his first visit he found her lying down on the right side, with an extremely rapid, soft and intermittent pulse, the mucous membranes very pale, and the respiration much accelerated. The animal was making frequent and repeated expulsive efforts. A diagnosis of internal abdominal hemorrhage was made, and a fatal prognosis

given; death took place shortly after. At the post mortem the abdominal cavity was found full of blood. All the abdominal organs were healthy except the spleen, which presented on its internal face a large laceration. The serous and fibrous coats were irregularly torn in their length to an extent of about 15 centimeters (over 7 inches). On the left hypochondriac region there was a slight tumefaction, with bloody extravasations between the peritoneum and the muscular structure. The animal having been severely kicked by another horse on the previous day and taken ill at that time, it is evident that this was the cause of the laceration of the spleen and the consequent abdominal hemorrhage.—*Ibid.*

DENTAL NEURALGIA.

By Mr. MACORPS.

An old horse had for about a week refused his food, carrying his head down and resting the occiput upwards against the lower border of the manger, as if trying to raise it. The patient was dull and listless, the mucous membranes pale, the coat staring, the flanks retracted. At times the muscles of the neck were the seat of slight trembling, and he had convulsive movements as if in great pain.

Careful inquiry into the history of the trouble failing to throw any light upon the case, or to aid in the diagnosis, a minute examination of the mouth was made, when a black foreign body was found projecting between the first two molars of the lower jaw. This was knocked off with a chisel and hammer, and followed within an hour by complete recovery.—*Ibid.*

QUADRIGIMELLAR GESTATION IN A COW.

By M. ROSAM.

The author was consulted upon the condition of a cow whose appetite was failing and who throve but poorly. He advised a tonic and stimulant treatment under which she did well, and in proper season, was sent to pasture. Some six months later, Mr. R. was again consulted, as the animal, though having a great appetite and eating all that was given her, was still losing flesh

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rapidly. Better and more abundant feeding was prescribed, but still the animal lost flesh, while her abdomen was increasing considerably in size. An empiric amputated her tail, saying she was suffering with worms in that member. Still she failed to improve, and at the post-mortem the cow was found pregnant with four perfectly developed calves in her uterus, weighing altogether 94 kilogrammes, (about 188 pounds). All these calves were males.—*Ibid.*

EPITHELIOMA OF THE CLITORIS IN THE COW.

BY M. CONTAMINE.

This case is recorded principally on account of the rarity of its occurrence. The animal was a six years old cow, and had for some time presented a growth at the lower end of the vulva, which had caused much suffering, as it continued to enlarge. This growth was painful; about the size of a pigeon's egg; elongated; and divided into small irregular lobules of a cauliflower form. As it was already undergoing softening on one spot, and on account of its size and sensibility, its amputation was immediately decided upon. This was done with an elastic ligature, which was placed at the base of the tumor, and tightened as much as it would bear. This was accompanied by great pain, manifested by the restless movements of the animal, but she was relieved by lotions of phenic acid and tincture of arnica. Four days afterwards the tumor, being strangulated by the ligature, was twisted off, and the wound which resulted was cauterized with the actual cautery. A short time afterwards the cow was delivered of a healthy calf.—*Ibid.*

CARILAGINOUS QUITTOR.

BY BRIL.

A black horse had been for more than a month suffering with carilaginous quittor of the off hind leg. He presented a fistula on the inside cartilage, running through that structure, and a cicatric indicating the presence of another tract, all healing. There was also a second fistula, more superficial, and corresponding

with the first. The animal was quite lame. Having before obtained good results with the injection of permanganate of potash, the author decided to try it in this case. As it requires some care in using it, but three daily injections were carefully made, for three days. After that time the treatment was changed, and injections of Villate's solution substituted, to be but used but once a day. In three days the recovery was complete.—*Ibid.*

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ASSISTANT (STATE) SECRETARIES.—C. W. Crowley, D.V.S., Missouri; J. C. Myers, Jr., M.D., V.S., Ohio; B. McInnes, V.S., South Carolina; C. C. Lyford, V.S., Minnesota; W. H. Hoskins, D.V.S., Pennsylvania; D. J. Dixon, D.V.S., New Jersey; J. Gerth, Jr., D.V.S., Nebraska; Wm. Dougherty, D.V.S., Maryland; P. Z. Colsson, V. S., Alabama; M. Bunker, D.V.S., Mass.; F. W. McLellan, V.S., Connecticut; Geo. H. Bailey, D.V.S., Maine; H. J. Detmers, V.S., Illinois; J. D. Hopkins, Wyoming Territory; D. M. Scheffer, V.S., Indiana; C. H. Peabody, D.V.S., Rhode Island; E. W. Rowland, D.V.S., Wisconsin; W. B. Rowland, D.V.S., Delaware; Frank Traver, D.V.S., New York.

COMMITTEE ON ARMY LEGISLATION.—A. Liantard, M.D., V.S., New York, N. Y.; C. P. Lyman, M.R.C.V.S., Boston, Mass.; Jos. C. Bushman, M.R.C.V.S., Washington, D. C.

SANITARY LEGISLATION.

RULES AND REGULATIONS FOR THE SUPPRESSION OF CONTAGIOUS PLEURO-PNEUMONIA.

Recent acts of Congress make it the duty of the Commissioner of Agriculture to prepare rules and regulations for the suppression and extirpation of the contagious pleuro-pneumonia

of cattle, and authorize expenditures for investigation, disinfection, quarantine, and for the purchase of diseased animals for slaughter. The following are the sections bearing upon this subject:

SECTION 3.—That it shall be the duty of the Commissioner of Agriculture to prepare such rules and regulations as he may deem necessary for the speedy and effectual suppression and extirpation of said diseases, and to certify such rules and regulations to the executive authority of each State and Territory, and invite said authorities to co-operate in the execution and enforcement of this act. Whenever the plans and methods of the Commissioner of Agriculture shall be accepted by any State or Territory in which pleuro-pneumonia or other contagious, infectious, or communicable disease is declared to exist, or such State or Territory shall have adopted plans and methods for the suppression and extirpation of said diseases, and such plans and methods shall be accepted by the Commissioner of Agriculture, and whenever the Governor of a State or other properly constituted authorities signify their readiness to co-operate for the extinction of any contagious, infectious, or communicable disease, in conformity with the provisions of this act, the Commissioner of Agriculture is hereby authorized to expend so much of the money appropriated by this act as may be necessary in such investigations and in such disinfection and quarantine measures as may be necessary to prevent the spread of the disease from one State or Territory into another. (Approved May 29, 1884).

BUREAU OF ANIMAL INDUSTRY.

For carrying out the provisions of the act of May 29, 1884, establishing the Bureau of Animal Industry, \$100,000; and the Commissioner of Agriculture is hereby authorized to use any part of this sum he may deem necessary or expedient, and in such manner as he may think best, to prevent the spread of pleuro-pneumonia, and for this purpose to employ as many persons as he may deem necessary, and to expend any part of this sum in the purchase and destruction of diseased animals whenever in his judgment it is essential to prevent the spread of pleuro-pneumonia from one State into another. (Approved June 30, 1886).

In accordance with the rules and regulations of the Department of Agriculture, which are hereby approved, and which shall be in full force and effect with the m

1. The Department of Animal Industry

2. The Department of Animal Industry is hereby authorized to purchase and slaughter cattle under the supervision and control of the Department in similar cases as in the case of herds when the disease is found or the chief of the Department

3. All the Department of Animal Industry is hereby authorized to forward to the Department of Agriculture for the purpose of inspection and disinfection, he will be authorized to do so as well as to

4. The Department of Animal Industry is hereby authorized to forward to the Department of Agriculture for the purpose of inspection and disinfection, he will be authorized to do so as well as to

5. When the disease is found in a herd, the chief of the Department of Animal Industry is hereby authorized to inspect the herd, and if the disease is found, he is authorized to slaughter the affected animals, and to destroy the remainder of the herd, and to slaughter the diseased animals

6. To insure the safety of the herd, the chief of the Department of Animal Industry is hereby authorized to fasten the diseased animals with the horns of the herd, and to slaughter the diseased animals

In accordance with these laws I hereby certify the following rules and regulations for co-operation between the Department of Agriculture and the authorities of the several States and Territories, which I deem necessary to insure results commensurate with the money expended :

INSPECTION.

1. The necessary inspectors will be furnished by the Bureau of Animal Industry of the Department of Agriculture.

2. The properly constituted inspectors of the Bureau of Animal Industry, which are assigned to the respective States, are to be authorized by proper State authorities to make inspections of cattle under the laws of the State; they are to receive such protection and assistance as would be given to State officers engaged in similar work, and shall be permitted to examine quarantined herds whenever so directed by the Commissioner of Agriculture or the chief of the Bureau of Animal Industry.

3. All reports of inspections will be made to the Bureau of Animal Industry, and a copy of these will then be made and forwarded to the proper State authorities; when, however, any inspector discovers a herd infected with contagious pleuro-pneumonia, he will at once report the same to the proper State authority as well as to the Bureau of Animal Industry.

4. The inspectors, while always subject to orders from the Department of Agriculture, will cordially co-operate with the State authorities and will follow instructions received from them.

QUARANTINE.

5. When contagious pleuro-pneumonia is discovered in any herd, the owner or person in charge is to be at once notified by the inspector, and the quarantine regulations of the State in which the herd is located are to be enforced from that time. The affected animals will be isolated, when possible, from the remainder of the herd until they can be properly appraised and slaughtered.

6. To insure a perfect and satisfactory quarantine, a chain fastened with a numbered lock will be placed around the horns, or with hornless animals around the neck, and a record will be

kept showing the number of the lock placed upon each animal in the herd.

7. The locks and chains will be furnished by the Department of Agriculture, but they will become the property of the State in which they are used, in order that any one tampering with them can be proceeded against legally for injuring or embezzling the property of the State.

8. Quarantine restrictions once imposed are not to be removed by the State authorities without the consent of the proper officers of the Department of Agriculture.

9. The period of quarantine will be at least ninety days, dating from the removal of the last diseased animal from the herd. During this period no animal will be allowed to enter the herd or to leave it, and all animals in the herd will be carefully isolated from other cattle.

When possible, all infected herds are to be held in quarantine and not allowed to leave the infected premises except for slaughter. In this case fresh animals may be added to the herd at the owner's risk, but are to be considered as infected animals and subjected to the same quarantine regulations as the other members of the herd.

SLAUGHTER AND COMPENSATION.

10. All animals affected with contagious pleuro-pneumonia are to be slaughtered as soon after their discovery as the necessary arrangements can be made.

11. When diseased animals are reported to the State authorities, they shall promptly take such steps as they desire to confirm the diagnosis. The animals found diseased are then to be appraised according to the provisions of the State law, and the proper officers of the Bureau of Animal Industry (who will be designated by the Commissioner of Agriculture) notified of the appraisal. If this representative of the Bureau of Animal Industry confirms the diagnosis and approves the appraisal, the Department of Agriculture will purchase the diseased animals of the owner and pay such a proportion of the appraised value as is provided for compensation in such cases by the laws of the

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State in which the animals are located, when they are condemned and slaughtered by State authority.

DISINFECTION.

12. All necessary disinfection will be conducted by the employees of the Bureau of Animal Industry.

INOCULATION.

13. Inoculation is not recommended by the Department of Agriculture, and it is believed that its adoption with animals that are to be afterwards sold to go into other herds would counteract the good results which would otherwise follow from the slaughter of the deceased animals. It may, however be practiced by State authorities under the following rules:

14. No herds but those in which pleuro-pneumonia has appeared are to be inoculated.

15. Inoculated herds are to be quarantined with lock and chain on each animal, the quarantine restrictions are to remain in force as long as any inoculated cattle survive, and these animals are to leave the premises only for immediate slaughter.

16. Fresh animals are to be taken into inoculated herds only at the risk of the owner, and shall be subject to the same rules as the other cattle of the inoculated herd.

17. The chief of the Bureau of Animal Industry is to be promptly notified by the State authorities of each herd inoculated, of the final disposition of each member of the herd, of the post-mortem appearances, and of any other facts in the history of the herd which may prove of value.

The co-operation of Governors, of State live-stock commissions, and of other officers who may be in charge of the branch of the service provided for the control of the contagious diseases of animals in the States where pleuro-pneumonia exists, is earnestly requested under these rules and regulations, which have been framed with a view of securing uniform and efficient action throughout the whole infected district. It is hoped that with a vigorous enforcement of such regulations, the disease may be prevented from extending beyond its present limits, and may be in time entirely eradicated.

NORMAN J. COLMAN, *Commissioner of Agriculture.*

SOCIETY MEETINGS.

NATIONAL VETERINARY ASSOCIATION OF GREAT BRITAIN.

The fourth annual meeting of the National Veterinary Association opened in Edinburgh yesterday, and will be continued over to-day. The members of council met at ten o'clock in the offices of the Highland and Agricultural Society, George IV. Bridge, Principal Walley, of the Royal (Dick) Veterinary College, Edinburgh, presiding. It was agreed to recommend to the general meeting that next year's meeting should be held at Peterborough, and Mr. Mackinder of that city was nominated President for the year. The following were nominated: Vice-Presidents:—Captain Russell, Grantham; Mr. Hardie, Sleaforth; Mr. Run-ciman, Market Deeping; Mr. Joseph Axe, Doncaster; Mr. Wiggins, Market Harborough; and Mr. Santy, Norwich. Mr. F. W. Wragg, London, was nominated for re-election as Treasurer, and Mr. George A. Banham, Cambridge, as Secretary. The report of the Secretary stated that there were now 310 members of the Association, being an increase of 34 in the year. A series of questions have been issued asking information upon the different branches of horse-shoeing, and the answers will be embodied in a paper for next meeting. At the general meeting held afterwards—Principal Walley in the chair—the nomination of office bearers was confirmed, and the other recommendations of the council were also adopted. A suggestion by Professor M'Call, Glasgow, that the next meeting be held two years hence, was not pressed.

The President, in his opening address, welcomed the Association to Edinburgh, which to all veterinary surgeons, he said, was classical ground, for here, upwards of a century ago, the pioneer and father of veterinary surgery was born, and upwards of seventy years ago he commenced, under disadvantageous circumstances, to teach the practice of veterinary medicine. It was a fortunate day for the profession when Professor Dick turned his back on the London Veterinary College, and sturdily retraced his steps to Scotland and established a veterinary school of his own. Having referred to the fact that Edinburgh was the only city in the United Kingdom that was able to support more than one veterinary school, Principal Walley made a kindly allusion to the recognition given to their profession by the Highland and Agricultural Society for sixty years. After sketching the origin and progress of the National Veterinary Association, and the objects it had in view, the President briefly remarked on the immense strides made in the unification and consolidation of the profession during the last twenty years, and, in conclusion, expressed the hope that the day was not far distant when the Government would recognize the importance of the veterinary profession in the economy of the country by extending to it a helping hand. On the motion of Principal Williams—who referred to the valuable services to scientific thought of the late John Barlow—a hearty vote of thanks was given to Principal Walley for his address.

HOMŒOPATHY IN THE TREATMENT OF ANIMALS.

The first paper taken up for discussion was one by Mr. J. S. Hundall, Liverpool, on the question—"Can experimental pathogenesis be rendered useful in elucidating a definite system of veterinary therapeutics?" The writer asserted

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Mr. T. H. combated the should rely so physic to the c a small commi Hurndall. H when it was tration of larg thought that, it was nature t said the paper homœopathy. symptoms wa pain and reduc bronchial tube greatest factor tates of nature disease ought t It was by follo dies when requ ing the "hero become succes understood ph treatment. A seldom gave a tioners. He i give less medic M'Call, Glasg continued the resuming, the cised the pape especially with Mr. Greaves, the administra in certain cir knew from ex

that their therapeutics were not up to present day practice, and called aloud for revision. The teaching of therapeutics in the schools was inadequate to fit their members for their duties, if they were to have an enlightened scientific method of administering drugs, and not a bald, empirical method. He proceeded to refer to some diseases or morbid conditions which caused the practitioner considerable anxiety, and he argued from the methods of treatment that there was urgent necessity for a revision of their therapeutics. He took as an illustration bronchitis, and recommended the administration of aconite and bryonia. Pathogenetic experimentation on animals in health was, he said, not only reasonable, but likely to prove of the highest value to the veterinary profession, provided they were carried out systematically and with the closest observation.

Mr. T. Hopkins, Manchester, who opened the discussion on the paper, combated the views of the essayist and demurred to his recommendation that they should rely so largely on drugs. Without the *vis naturæ* they might throw physic to the dogs. Mr. Pottie, Paisley, took a similar view, but suggested that a small committee be appointed to experiment on the lines recommended by Mr. Hurndall. His experience showed that bleeding was far superior to aconite when it was necessary. Mr. Cameron, North Berwick, favored the administration of large instead of small doses of aconite. Mr. Greaves, Manchester, thought that, in many cases where homœopathy got the credit of curing disease, it was nature that had more to be thanked than medicine. Principal Williams said the paper had a high-sounding title, but it really amounted to nothing but homœopathy. The principal of treating disease with the view of combating the symptoms was irrational. Physiologically, aconite had the effect of soothing pain and reducing the action of the heart, but it had no specific effect on the bronchial tubes. It gave the animal repose, and they all knew that rest was the greatest factor in the cure of disease. But because they should follow the dictates of nature in the treatment of disease, he did not support the notion that disease ought to be allowed to take its course without any remedy being attempted. It was by following the dictates of nature, by the scientific application of remedies when required, by a reliance on the *vis medicatrix naturæ*, and by abandoning the "heroic measures" that appertained in his younger days, that they would become successful in their treatment. Dr. Fleming, London, said the better they understood physiological processes the better could they carry out pathological treatment. As a veterinary surgeon of over twenty-five years' experience, he seldom gave a dose of medicine, and he had been as successful as other practitioners. He impressed upon young members of the profession that they should give less medicine, and attend more to the requirements of nature. Professor McCall, Glasgow; Mr. Kidd, Hungerford; and Professor McFadyean, Edinburgh, continued the discussion, after which the company adjourned for luncheon. On resuming, the discussion was continued by Mr. McCallum, Edinburgh, who criticised the paper, and said it went altogether against his twenty years' experience, especially with regard to the application of aconite. Mr. Kidd, Hungerford, and Mr. Greaves, Manchester, having added a few remarks giving their experience in the administration of aconite, Principal Walley said he would administer aconite in certain circumstances, but not in those recommended by the essayist. He knew from experience that they could give aconite with bicarbonate of potash or

other alkaloid, providing they gave it in ball form, but if administered as a draught the chances were they would kill their subject. Mr. Hurndall, replying on the discussion, said he did not underate the power of nature, but contended that nature was incapable of doing all that was required. Relying upon nature unaided was like trusting to a broken reed. He agreed that they could not cure disease, but could only assist nature, and that was what he aimed at. He regretted the introduction of the term "homœopathy." His object had been, not to sustain the principles of homœopathy, but to convince them that investigation into the action of drugs was an essential at this time. He admitted that the principles he advocated was adopted by homœopaths, but that was an entirely different matter. His practice might be a limited one, but he invariably trusted to aconite in cases of colic, and he had yet to lose his first case. On the motion of Mr. Wragg, a vote of thanks was given to Mr. Hurndall for his paper.

MICRO-PARASITE IN ANIMALS.

The next subject taken up was "Notes on some of the micro-parasites of the domesticated animals," by Professr M'Fadyean, of the royal Veterinary College, and Dr. Sims Woodhead, Pathologist to the Royal Infirmary, in which they treated of splenic apoplexy, splenic fever, anthrax, quarter-evil, black-leg, glanders, swine fever, tubercle in the udders of cattle and in milk, and louping-ill. Having narrated the symptoms of the various diseases, and given a resumé of the investigations by scientists, the essayists indicate the conclusions at which they have arrived. With regard to anthrax, they are of opinion—(1) That Pasteur has succeeded in preparing a vaccin by the employment of which the domestic ruminants are put in possession of a high degree of immunity against spontaneous or inoculated anthrax; (2) that by no known method of attenuation can there be obtained a vaccin of absolutely uniform strength; (3) that it is not possible to obtain a vaccin that is at once and equally applicable to all the different species of domestic animals, or even to all the different breeds of the same species; and (4) that, even in the most capable hands, accidents capable of entailing serious results may happen in the preparation of vaccin, or in its employment. Dealing with louping-ill in sheep, the writers combat at length the views of Principal Williams, in his report to the Highland and Agricultural Society in 1883, in which he claimed to have proved that the disease was of a micro-parasitic nature, being caused by a bacillus. Why, they ask, "if Professor Williams suspected the presence of a micro-organism in the ticks, did he not examine the tick directly, instead of taking the round-about method of incubating the tick in mutton broth? Again, does Professor Williams really mean anybody to believe that he ever succeeded in getting a pure cultivation by incubating a tick? or does he mean that he could find a tick anywhere whose body is germ-free? We really would refuse to credit Professor Williams with this belief, were it not that we have to choose between that and believing that he attempted, in his reports, to play a huge joke at the expense of the non-scientific members of the Highland and Agricultural Society. And, again, we fail to see the necessity of bringing in the tick to explain the mode of infection of the sheep. If there was a difficulty in understanding how the organism could gain access to the system of a sheep except by the inoculation of a tick, it still remains to explain the mystery of how the organ-

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ism gets into the tick. But who ever heard of an intermediary bearer being necessary to complete the life-history of a bacillus? Lastly, and perhaps we ought to have taken this first, it surely was a strange proceeding, on the part of any one investigating a particular disease, to come to the conclusion that the disease was a micro-parasitic one, and not attempt to prove it." In concluding their criticism of Professor Williams' report the essayists say they would commend to his notice the conditions formulated by Koch, and now universally accepted, as demanding fulfilment in every case, before it can be held proved that any disease is caused by a particular micro-organism:—" (1) It must be shown that in every case of that particular disease the organism is present in the tissues or fluids of the diseased animal. (2) *Pure* cultivations, started from the tissues or fluids of the diseased animal, must be carried on through successive generations outside the body. (3) The disease must be excited in the body of a healthy subject by infecting it with a portion of such a pure cultivation. (4) In the body of this last subject microscopic examination must demonstrate the same micro-organisms as were present in the subjects of the disease spontaneously contracted. With how many of these conditions has Professor Williams complied in his investigation of louping-ill? None. These investigations, therefore prove nothing, except that Professor Williams neglected the most elementary details of bacteriological research."

Mr. Rutherford, Edinburgh, in proposing that Dr. Hunter, of the New Veterinary College, Edinburgh, open the discussion on the paper, said he was sorry to find that the manner in which the subject had been treated reflected no credit on the writers of the paper. Professor McFadyean was a young and might be an eminent bacteriologist and sarcastic critic, but he was sure the members would agree with him that he had not treated this subject in a proper spirit. He expressed the very sincere hope that in future papers of the Association no member would ever dare to send such a paper to his brother members, or he (Mr. Rutherford) would move that it be deleted from the agenda. (Hear, hear.)

Professor Hunter traversed the views of the essayists in dealing with Professor Williams' report on louping-ill, and said the critics had overshot the mark in not making allowance for future discoveries. If that portion of the paper had been torn out and given to him, he would have said that it never formed a part of the Association's proceedings, but was the production of a fourth-rate American newspaper. Having supported the investigations of Professor Williams, and claimed that his report was justified by the results, Dr. Hunter said that until something better could be shown than Professor Williams had done, it was not the part of any man, be he practitioner or not, to run down his work until he had something better to put in its place. (Applause.)

Principal Williams said perhaps it would be wiser in him to take no notice of the last part of the paper, which reflected very much on himself. The meeting would probably take Mr. Rutherford's remarks as the feeling of most of the members regarding such a severe and personal criticism on the work which he had done towards what he thought was the advancement of his profession. He was very much surprised to find the name of Dr. Woodhead on that paper. As to the other gentleman, he was not at all surprised; his motive was not far to seek. In dealing with the criticism on his paper, the Principal said he had

destroyed sheep, and had had the spinal canal opened within ten minutes after death, and he had found the organism which he called bacillis, and the existence of which seemed to be doubted by the writers of the paper. He had done so, not once, but hundreds of times, and he thought he was justified in arriving at the conclusion that that organism had something to do with the disease. He had not, as his critics said, "perpetrated a huge joke at the expense of the Highland and Agricultural Society." He had too much respect for the members of that society, to whom he himself and the veterinary profession in Scotland were very much indebted, and he could not think of any other object the writers had in view than to damage him in the eyes of the members of that society. He believed, however, that the paper was the work not of two men, but of one. They had thought proper to tender him, who had worked with the microscope probably before either of them was born, a beautiful piece of advice in their concluding remarks. Their third commendation to him was that "the disease must be excited in the body of a healthy subject by infecting it with a portion of such a pure cultivation." That was quite enough for him. They were all aware that pleuro-pneumonia was a contagious disease, and he would ask if any man had ever induced that disease by inoculation? (A voice, "Never.") The feet were knocked from under them by that third recommendation. But there were other errors in the paper which proved to him that it was written by a 'prentice hand.

Professor McFadyean said nobody denied that pleuro-pneumonia was contagious, but that was a different thing from saying that it was due to a micro-organism.

Principal Williams said that if Professor McFadyean took that line he would deny anything, for he (Principal Williams) maintained that it was a micro-organism.

Principal Williams and several of the other gentlemen who had taken part in the proceedings, left the meeting at this stage; and the President said, as some of those who had gone had spoken somewhat strongly regarding the authors of the paper, he thought it would be perhaps well that the reply of Dr. Woodhead and Professor McFadyean should stand over till next day.

Mr. Bell, Carlisle, said he should be happy to come there the next day and hear the discussion, but on reading the latter part of the paper he could not but think that the attack made on Professor Williams had been a personal one.

Dr. Woodhead said that for himself he preferred to give his reply in the presence of Professor Williams. It struck him that the speakers had put down as personal what he regarded as a purely scientific matter. No one had a greater admiration for Professor Williams than himself, but he felt that too much had been made of the personal question, which had not weighed with him at all.

Professor McFadyean concurred in Dr. Woodhead's remarks, and said he would have a few words to say next day for the benefit of Professor Williams, and for some other gentlemen who had measured his corn in their bushel.

On the motion of Mr. Bell, the discussion was adjourned till to-day, and the company separated shortly before six o'clock.

THE LUNCHEON.

At the luncheon in the afternoon, which took place in the Waterloo Hotel,

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there were upwards of a hundred gentlemen present. Principal Walley occupied the chair, and Principal Williams and Dr. Fleming, London, were the croupiers. Among those supporting the Chairman were Bailies Cranston, Anderson and Turnbull; Councillor Tait; Mr. Adam, City Chamberlain; Mr. Skinner, Town Clerk; Mr. Harris, Depute Town Clerk; Mr. Campbell, Depute City Clerk; Professor Simpson; Colonel Borthwick, Chief Constable of Mid-Lothian; Captain Henderson, Chief Constable of the city; and Mr. F. N. Menzies, Secretary to the Highland and Agricultural Society. After the loyal toasts had been proposed from the chair, Mr. Simpson, Windsor, gave "Prosperity to the city of Edinburgh," referring to the great improvements that had been effected in the city since he last visited it thirty years ago. Bailie Cranston acknowledged the toast. Professor Williams, in proposing "The University of Edinburgh," said that in all probability there would not have been even one veterinary school in Edinburgh to-day but for the great encouragement extended to Professor Dick by the University professors. Professor Simpson replied for the toast. Dr. Fleming gave "The Highland and Agricultural Society of Scotland," speaking of the great assistance rendered by the society, not only to agriculture, but to veterinary science. He coupled the toast with the name of Mr. F. N. Menzies, who briefly replied. Bailie Anderson proposed "Prosperity to the National Veterinary Association," for which the President (Principal Walley) replied. The company then adjourned.

A supper and dance took place in the Waterloo Rooms in the evening.

CRUELTY TO CATTLE.

The President has given notice that he will move—

"That the practice of overstocking the udders of cows for sale and show purposes is an act of gross cruelty; that it is sufficient to prove cruelty when the udder is found to be distended to its utmost, to be hard, painful, and unyielding to the touch, and when the animal shows signs of pain by uneasy movements of the hind limbs, and by straddling gait in progression; that it is an act of cruelty to leave the udder of a newly-calved cow for a longer period than eight hours without removing the milk, or the greater part of it, therefrom.

"That the practice of dishorning cattle by sawing or cutting off the horn through its centre or its base is unnecessary and cruel; that for the purpose of preventing cattle from injuring each other, it is sufficient to remove so much of the horn as to expose the end of the core, or, in the case of young cattle up to nine months old, to saw off the end of the horn obliquely from before backwards—the latter process, as the horn grows, causing it to turn in a backward direction."

A HIGHER DEGREE FOR THE PROFESSION.

The President has also given notice of the following motion for to-day:

"That the time has now arrived when it is advisable that a higher degree—viz., that of Doctor of Veterinary Medicine—than that of Fellow should be instituted by the Royal College of Veterinary Surgeons, this being necessary to place the profession on the same footing as that enjoyed by other professions and the sciences.

SECOND DAY, JULY 23, 1886.

The annual gathering of the National Veterinary Association was brought to a

close yesterday in the Highland Society's Offices, George IV. Bridge, Edinburgh. Principal Walley, of the Royal (Dick) Veterinary College, again presided.

MICRO-PARASITES IN ANIMALS.

The first business was the reply of Dr. Woodhead and Professor M'Fadzean to the discussion on their paper on "Micro-Parasites of the Domestic Animals," which was adjourned from the previous day because of the absence of Professor Williams, whose views on louping-ill in sheep were combatted by the essayists. Principal Williams was again absent yesterday when the discussion was resumed. The President said he regretted the tone of the discussion on this paper, for there was an immense amount of really good and valuable material in it. While acknowledging the amount of work done by Professor Williams and those associated with him, he could not agree with him that louping-ill was due to such an organism as that which he had discovered. He (the President) looked upon louping-ill as purely and simply a dietetic and climatic disease, and not due to any parasitic organism. The presence of such organisms in sheep was accidental, and by allowing the blood to get out of order they could be produced in the human body. It was admitted by practical shepherds in Roxburghshire and elsewhere that they had only to turn cattle on to the pastures at the end of the season and they would get rid of louping-ill, thus proving that it was simply a dietetic disease.

Dr. Woodhead disclaimed any intention on the part of Professor M'Fadzean or himself of conveying insult to such a distinguished man in the profession as Principal Williams. They apologized to Professor Williams for anything that he might construe into a personal insult—(applause)—but they did not retract a single statement as to the matters put forward by Principal Williams in his report to the Highland and Agricultural Society on louping-ill. Micro-organisms were a debatable point, but they believed the evidence was in favor of a single species at some particular stage of its life being the pathogenetic agent of the disease, and, as a rule, that pathogenetic organism was found in only one stage of its existence. He hoped Professor Williams would continue his researches into the causes of louping-ill, although he dissented from the conclusions at which he had arrived as the result of his investigations.

Professor M'Fadzean also expressed regret that the element of personality had crept into the discussion and he specially resented the remarks of Mr. Ruthersford, whom he did not consider the censor of professional ethics. The remarks of Professor Williams had caused him great annoyance, because of his assertion that he (Professor M'Fadzean) had been endeavoring to discredit him in the eyes of the members of the Highland and Agricultural Society. That assertion did him great injustice, and did Professor Williams great dishonor, for nothing could have been further from his intention than to reflect on Professor Williams' position in regard to that Society. He had a great admiration for Principal Williams' work, but he was not to be debarred from criticising his writings or public statements, and while he admitted that Principal Williams was a great practitioner, as a bacteriologist he was nowhere. Professor Williams had tried to throw dust in the eyes of the Association, and had avoided the main points of the paper. He declined to be drawn into a statement as to what share Dr. Woodhead and himself had had in writing the paper; but he might say that Professor

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Mr. T. H the veterinary forming an op underrated the many cases in would be diff Mr. M'Grigor, cabman in the Gangee's treat ifax, brought epidemic, and Paiseley, refer in regard to la it would be of Professor W. practitioners lame, which with the essa study of anat The discussio Kirkcudbright

Williams was singularly incorrect in his selection of passages to prove that his only share in the paper was in that portion which criticised his work. It would be cruel to deny Professor Williams any satisfaction he might derive from the statement that he had used the microscope before either Dr. Woodhead or himself was born, but such assertions were not argument.

The President said that in spite of all that had passed he thought the work of Dr. Woodhead and Professor M'Fadzean deserved the thanks of the Association. They had undertaken the duty of preparing the paper at his own request. He had asked them to do so, because he had long felt that if their profession was more intimately associated with medical men in their daily work they would not see the remarkable statement so often made by members of the medical profession with reference to the diseases of animals as affecting men. He hoped to see the day when the professions would work more together. (Applause).

On the motion of Mr. Campbell, Kirkcudbright, seconded by Mr. Cameron, North Berwick, a vote of thanks was awarded to the writers of the paper, and Dr. Woodhead acknowledged the compliment.

LAMENESS IN HORSES.

Mr. William Hunting, London, submitted a paper on "Lameness in Horses," in which he described the symptoms of the various phases of lameness, and made special reference to the difficulty of diagnosing. He impressed upon them the error of hasty diagnosis, and urged that a correct diagnosis was more likely to be arrived at by a cool, logical exercise of the brain than by the hasty generalization of intuition. The direct causes of lameness were pain, mechanical interference, and defective innervation, and the symptoms were local tangible changes and alterations in the position and action of the limb. Position and action were valuable guides to a correct diagnosis, which was not intuitive, and was not a guess.

Mr. T. H. Simcocks, Drogheda, supported the views of the essayist, and said the veterinary profession would be thought more of if they were less hasty in forming an opinion. Mr. Henry Hunter, Newcastle, thought Mr. Hunting had underrated the power of diagnosing cases by the gait of the animal. There were many cases in which that could be done, although there were more in which it would be difficult to arrive at a proper conclusion without careful observation. Mr. M'Grigor, Bedlington, mentioned that twenty-five years ago there was an old cabman in the city who used to buy lame horses and bring them under Professor Gangee's treatment, and they were made wonderfully useful. Mr. Walter, Halifax, brought under the notice of the meeting a form of lameness which was epidemic, and which the President attributed to imperfect washing. Mr. Pottie, Paisley, referred to the great diversity of opinion that existed in the profession in regard to lameness, as was shown in the evidence given in legal cases, and said it would be of great benefit if they could come to some agreement on the matter. Professor W. O. Williams, New Veterinary College, Edinburgh, recommended practitioners to make notes of the length of the stride made by animals going lame, which would greatly assist their diagnosis. Principal Williams agreed with the essayist that a correct diagnosis was only to be obtained by a careful study of anatomy, and the action of the various muscles concerned in locomotion. The discussion was continued by Mr. Cameron, North Berwick; Mr. Campbell, Kirkcudbright; Mr. Greaves, Manchester; Mr. Simpson, Maidenhead; Mr.

M'Gavin, Welshpool; Mr. Roberts, Kendal; and Mr. Baird, Jr., Edinburgh. The President, in closing the discussion, said lameness was generally due to pain, but frequently to defective action. In the prosecutions for cruelty to animals there were many instances in which it was said that it would be cruelty to work the animal, although in reality it suffered no pain whatever, but was simply lame from defective action. These were the cases in which veterinary evidence was of value. He could not see how any veterinary surgeon could make a mistake in distinguishing between knee and foot lameness; but generally in diagnosing the best thing to do was to follow the legal example in Scotland, and "take the case to avizandum." On the motion of Principal Williams, seconded by Mr. M'Callum, Edinburgh, Mr. Hunting was cordially thanked for his paper.

THE USE OF ANÆSTHETICS.

The next paper taken up was one by Professor W. O. Williams, Edinburgh, and Mr. R. Roberts, Kendal, on "Anæsthetics and Anæsthesia in Relation to Veterinary Practice." The writers submitted a table of queries put to the heads of the various veterinary schools in Europe on the use of anæsthetics and the replies received to these queries. They gave their own experience as follows:—"Chloroform is the best general anæsthetic. For the horse, from one and a half to two ounces usually suffices to produce insensibility for a sufficient length of time to perform a short operation. For the cow, about two ounces is required; and for the dog, about an ounce. We find that to produce a short and perfect anæsthesia the less air admitted the better. In fact, we not only cause chloroform anæsthesia, but also carbonic acid anæsthesia. It takes from five to ten minutes to produce this condition, and with this method there is little or no excitement, but when the chloroform is administered with a large quantity of air there is almost always great excitement. If the animal does not recover from the narcosis in from ten to twenty minutes after the inhalation has been stopped we apply cold water to the head and give inhalations of ammonia. Neither of us have had a single death, and we have both performed very serious and long operations. Mr. Roberts administers anæsthetics in castration, parturition in mares, cows and bitches, removal of tumors, colic and intestinal pains, also to cause the painless death of animals. Mr. Owen Williams administers anæsthetics in castration of cryptorchids, removal of tumors, extraction of teeth in dogs and cats, and in causing painless death in old or useless animals, and in all serious operations. As a local anæsthetic we used cocaine, varying in quantity according to the affection, and paint it on to the parts at intervals of five minutes for half an hour before operating. Mr. Owen Williams has used cocaine in painful eye affections, has relieved the pain, and been thus enabled to apply other drugs to the parts without irritating the patient; he has also used it for the removal of vaginal tumors in the bitch, and in one case the animal watched the operations without either being tied or muzzled, and showed no symptoms of pain. We do not think that the administration of chloroform or cocaine interferes at all with the healing of the surgical wounds. Mr. Simpson, Windsor, who opened the discussion on the paper, said the study of anæsthetics was one of the most prominent subjects before the veterinary world, and they must expect before long that they would be called upon to introduce chloroform and other agents extensively. Mr. Olver, Tamworth; Mr. M'Gavin, Welshpool; Mr. Toop, Knares-

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borough; Mr. Hopkins, Manchester; Mr. Baird, Jr.; Mr. Greaves, Manchester; Mr. Simpson, Maidenhead; and Mr. Briggs, Bury, bore their testimony to the value of anæsthetics; and the President and Principal Williams expressed the hope that they would follow the example of the medical profession, and administer anæsthetics in all possible cases where pain would be caused by the operation. M. Roberts having supplemented the statements in the paper by giving his personal experience in the administration of anæsthetics, the essayists were, on the motion of Mr. Simpson, Windsor, awarded a vote of thanks.

MINOR SUBJECTS.

The President asked if it was the pleasure of the Association that he should proceed with the following motions, which, according to the rules, required to be put to the meeting without discussion, viz.:—

That the practice of overstocking the udders of cows for sale and show purposes is an act of gross cruelty; that it is sufficient to prove cruelty when the udder is found to be distended to its utmost, to be hard, painful, and unyielding to the touch, and when the animal shows signs of pain by uneasy movements of the hind limbs and by straddling gait in progression; that it is an act of cruelty to leave the udder of a newly-calved cow for a longer period than eight hours without removing the milk, or the greater part of it, therefrom.

That the practice of dishorning cattle by sawing or cutting off the horn through its centre or its base is unnecessary and cruel; that for the purpose of preventing cattle from injuring each other, it is sufficient to remove so much of the horn as to expose the end of the core, or, in the case of young cattle up to nine months old, to saw off the end of the horn obliquely from before backwards—the latter process, as the horn grows, causing it to turn in a backward direction.

That the time has now arrived when it is advisable that a higher degree—viz, that of Doctor of Veterinary Medicine—than that of Fellow should be substituted by the Royal College of Veterinary Surgeons, this being necessary to place the profession on the same footing as that enjoyed by other professions and the sciences.

Several members were of opinion that such important subjects could not be dealt with without discussion; and on the motion of Mr. Simpson, Maidenhead, seconded by Mr. Briggs, Bury, it was agreed that the motions be postponed, so that an opportunity might be afforded of having them placed on the agenda and properly discussed at next meeting.

Votes of thanks were then passed to the Highland and Agricultural Society for the use of their rooms; to the Lord Provost, Magistrates, and Town Council, for their reception; and to the firms who exhibited drugs and instruments. A similar compliment having been paid to the President, the meeting terminated shortly after six o'clock.

RECEPTION IN THE CITY CHAMBERS.

At one o'clock the Lord Provost, Magistrates, and Town Council gave a reception to the members of the Association in the City Chambers, where cake and wine were served. Lord Provost Clark presided, and he was supported by Principal Walley, Principal Williams, Professor Annandale, Professor Smith, Toron-

to; Mr. Graves, Manchester; Mr. Harry Oliver, Tamworth; Bailie Russell, and Bailie Walcot. The croupiers were Bailies Cranston, Roberts, and Turnbull. The Lord Provost having extended a hearty welcome to the members, proposed the usual toasts, after which his Lordship gave "The National Veterinary Association," making special reference to Professor Dick's connection with the city. The veterinary profession, he said, was distinguished for its acts of kindness to dumb animals. Unfortunately there were some people who were not so disposed, as they saw in the Police Court from time to time, but he had been struck by the affection that had been shown by cabmen to their horses, which could be seen on the streets of the city. He believed Edinburgh was the only city which could boast of two veterinary colleges. They were both the offspring of Professor Dick, and there was a happy rivalry between them. (Applause.) He coupled the toast with the names of Principal Walley and Principal Williams. Bailie Cranston, in supplementing the Lord Provost's remarks, said he had the pleasure of knowing Professor Dick, who sat in the Town Council for several years. His whole life was characteristic of what he did for the profession. (Applause.) He hoped many present would follow the example of Professor Dick, and not only found colleges, but endow them. (Laughter.) At the present time there were about a hundred men working at the reconstruction of the Royal College in Clyde Street, and when it was finished it would be second to none in the country. Principal Walley, in replying to the toast, said that was the Association's first visit to Scotland, but he was sure they would long remember that day as one of the brightest they had ever had. (Applause.) Principal Williams also acknowledged the toast, and in doing so, said Principal Walley and he worked harmoniously together in promoting the success of the gathering. As to competition in veterinary teaching, he thought that was entirely wrong. His opinion was that there should be one great veterinary school in the United Kingdom, so that they might have specialists whom they could pay for teaching the various subjects. (Hear, hear.) Mr. Graves, Manchester, proposed "The Health of the Lord Provost and Prosperity to the City of Edinburgh." The Lord Provost having acknowledged the toast, Professor Smith, Toronto, as a student of Professor Dick's who had been absent from this country for twenty-five years, bore testimony to the regard in which his name was held throughout the American continent. He concluded by proposing "The University of Edinburgh." Professor Annandale, whose name was coupled with the toast, said that if veterinary surgeons went on as they were doing, improving their education and their curriculum, the profession would soon be second to none in the country. Apologizing for his inadequacy to do justice to the toast, the Professor said he would rather perform "a little operation" than make a speech. (Laughter.) Principal Walley gave "The Visitors," for whom Mr. Hammond, of the Army Veterinary Department, responded. The Lord Provost then gave "Happy to meet, sorry to part, and happy to meet again," and the company separated.

VALUABLE CATTLE TO BE KILLED.—The large herds of cattle at the Levis Quarantine, valued at \$200,000, are to be killed, to prevent the spread of contagious pneumonia.

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OHIO STATE VETERINARY MEDICAL ASSOCIATION.

A meeting of the Ohio State Veterinary Medical Association was held at Dayton, O., June 16th, in the City Council Chambers, City Hall. Dr. T. Bent Cotton, President of the Association, called the meeting to order in a neat and appropriate speech, stating that he thought best not to occupy the valuable time of the Association by making a lengthy speech but he hoped that the present meeting would prove as pleasant and profitable as other preceding meetings had, and also stated that he hoped the Association would continue to work as harmoniously as it had in the past, that there was a great many important subjects to be discussed, and thought we had better proceed at once to the business of the Association. Owing to the absence of Dr. Lubrow, Recording Secretary, Dr. J. S. Butler was unanimously elected to the office for the present meeting.

About 25 members answered to the roll call from different parts of the State, showing the interest that is taken in the work of advancing the veterinary art in Ohio.

Several short communications were read from different members of the profession expressing regret that they could not be present and assist in the good work. Two very encouraging letters were received. One from Dr. Liautard, principal of the American Veterinary College, another from Dr. Smith, principal of the Ontario Veterinary College, Toronto, Ontario.

Two members were admitted to membership under a suspension of the rules, both being graduates of the Ontario Veterinary College, John E. Campbell, Alliance, O., W. Shaw, Dayton, O., both being vouched for by two members. The ballot being passed and found clear they were both duly elected and introduced to the members present.

The following gentlemen were elected to honorary membership: Prof. Geo. Fleming, author of several excellent veterinary works; Prof. A. Liautard, principal American Veterinary College; Prof. A. Smith, principal Ontario Veterinary College; Prof. McEachran, principal Montreal Veterinary College.

The Corresponding Secretary was instructed to inform each gentleman of the action of this Association.

Dr. J. C. Meyer, Jr., read a very able paper on the different methods of casting horses and showed some very good specimens of fractured vertebrae, the result of careless casting and confining of horses. A majority of the members present expressed their views on casting.

The operating table was discussed and the members were somewhat divided in opinion as to its merits.

Dr. Howe, of Dayton, spoke of the use of cocaine and its advantages in operating.

A prominent physician of Dayton spoke of the administration of chloroform to dogs, and out of about seventy-five which he had administered it to all died under its influence.

Dr. Fair stated that he was much surprised to learn that the doctor had met with such discouraging results and he feared it was all due to not admitting sufficient fresh air while the drug was being given, that from his own experience he had never lost one that way and never hesitated in giving it to dogs.

Drs. Meyer, Newton, Howe and several other members present spoke of the good success they had met with in the administration of anæsthetics to dogs.

The subject of how to treat parturient apoplexy was fully discussed, and many valuable prescriptions were given. Dr. Smith related two well marked cases which he treated successfully. One very strange feature pertaining to the treatment of parturient fever, is that no two practitioners rely on the same remedies.

A motion was made to adjourn to meet the following evening at 7.30 o'clock. Dr. Howe of Dayton invited the members and their families to take a drive to the Soldiers' Home at eight o'clock the following morning, which was accepted and a more pleasant half day could not have been spent. Every person present expressed their thanks for the doctor's kind hospitality. By the way, to some of the readers of the REVIEW it may be interesting for them to know that the Soldiers' Home accommodates four thousand one hundred soldiers. The grounds and buildings are neat and tasty and the seven hundred acres of land with its fine walks and drives, flower gardens, lakes and other attractions, all go to make it one of the most attractive spots in Ohio—one well worth seeing. Everything about the home is conducted in a business-like and systematic way, which certainly reflects great credit on the management.

The Dayton Driving Park Company tendered the members of the Association complimentary tickets to attend the races in the afternoon, which were accepted and enjoyed, as the sport was of first-class order. One feature which gave general satisfaction, was the even starts effected by Mr. R. J. Wheeler, of Toledo, who by the way, is an expert at starting horses.

The evening session was called to order, President Cotton in the chair.

W. C. Fair then read a lengthy paper on lameness, giving the causes, symptoms and treatment of many kinds of lameness. Nearly every member present spoke of some interesting case he had treated, and considerable discussion was indulged in with reference to the different methods adopted in the treatment of strains both of tendons, ligaments and muscles. The subject of treating bone spavin was fully discussed.

Prof. Detmars spoke of bad shoeing being one great cause of bone spavin lameness, and he would say that two-thirds of the lameness was caused by bad shoeing, and not one-half as Dr. Fair had stated in his paper; that is, of all lameness—not spavin alone.

Dr. Hillock spoke of his success in treating old horses for spavin, and on that point he must differ with Dr. Fair, who stated that few horses older than ten years ever recovered in cities from bone spavin lameness.

Dr. Detmars made a very nice speech on bone diseases, and supported Dr. Fair's theory of hereditary bone disease.

The subject of when and where the National Veterinary Medical Association would meet next fall was fully discussed. Columbus, Ohio, had been selected as the place at which to hold the meeting this fall. Several members present thought that each State Association should be independent of all other Associations. After considerable discussion, it was decided to hold our State Association meeting at Columbus, O., during State Fair week, and it was thought advisable to suggest to the National Association that they hold their annual meeting at the same place during the State Fair week.

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It was the unanimous opinion of those present that there should be only one National or United States Association, and that such meetings be open to all veterinary surgeons in the United States, where an exchange of ideas and an acquaintanceship may be made with each other.

Since holding our meeting I have received information from officers of the National Association, agreeing to hold their annual meeting at Columbus, O., on the 2d and 3d of September, at 8 o'clock A. M., in Tindal Hall, City Hall building. The Ohio State Veterinary Association holds its semi-annual meeting on September 1st in the same rooms.

A very cordial invitation is extended to all qualified veterinary surgeons, both in the United States and Canada, to be present and take part in the discussion of the many important questions that may come up. Any gentleman who may feel so inclined may read a short paper or relate any interesting cases that may be deemed of interest to the profession. A full attendance is earnestly requested.

Prof. Detmers, of Ohio State University, will read a paper on Glanders. Dr. D. P. Youkerman, of Cleveland, will read a paper on Medical Jurisprudence at the State Association meeting.

This will be the largest gathering of qualified veterinary surgeons ever held on this continent. Reduced railroad rates can be obtained.

W. C. FAIR, V.S., Cor. Sec. A.S.V.M.A.

NOTICES OF MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

NEW YORK, August 18th, 1886.

Editor American Veterinary Review :

DEAR SIR,—At a meeting of the Board of Censors of the United States Veterinary Medical Association held to-day at 14 & 16 Nevins street, Brooklyn, it was unanimously decided to hold the annual meeting of the Association in New York city, Sept. 21st, at 10 A. M. Due notice will be given each member.

CH. B. MICHENER, Sec'y.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of this Association will be held at Columbus, Ohio, Sept. 1, 8 a. m.

W. C. FAIR, V. S. Cor. Secretary.

KANSAS STATE VETERINARY MEDICAL ASSOCIATION.

The regular meeting of the Kansas State Veterinary Medical Association will be held in Topeka, Kansas, September 16, 1886. It being the annual meeting, a general good time is anticipated. In addition to the regular business of the society papers will be read and discussed by the members upon subjects of general interest to the profession and the stock breeders.

The public will be made welcome.

A. A. HOLCOMBE, *President.*

ED. R. ALLEN, *Secretary.*

CORRESPONDENCE.

VETERINARY SURGEON WANTED.

STANTON, NEB., August 4, 1886.

Editor American Veterinary Review :

DEAR SIR.—There is a first-class opening here for a good veterinary surgeon. Can you suggest and recommend any one? I am satisfied the right kind of a man could do well.

Hoping to hear from you, I am yours respectfully,

GEO. WINEGAR.

ANOTHER CHANCE FOR A VETERINARY SURGEON.

MARSHALL, Mo., August 14, 1886.

Editor American Veterinary Review :

DEAR SIR.—Please send me a buyer for my veterinary business. This is the county seat of the best county in the State of Missouri. My business is worth \$3,000 per year, and I will sell very cheap on account of other business. Have no competition in county. When I have sold, will leave this part of the State to engage in other business, but will not give up my veterinary business for nothing so please send me a buyer if you can.

Yours, respectfully,

T. A. EDWARDS.

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STILL ANOTHER.

WANTED, by a large corporation, owning a large number of horses, a thoroughly reliable and competent veterinary surgeon to give his entire time to the attention of the same. Must be a graduate and had practical experience.

To one qualified to fill the position, having good address and appearance, a permanent situation with fair salary is offered. Address, with age, reference, when and where graduated, salary expected, etc.

P. O. Box No. 239,
PHILADELPHIA, PA.

NEWS AND SUNDRIES.

PASTEUR'S WORK.—Professor Virchow is reported to have said, in a recent lecture at Berlin, that Pasteur had done the world a great service if he had succeeded only in allaying the fear consequent upon the bite of a mad dog.

ANTHRAX is reported raging amongst sheep in some parts of Wyoming Territory. [Why is it that veterinarians keep on ignoring the benefits to be obtained by inoculation by the methods of either Pasteur, Chauveau or Cornevin.—EDIT.]

TEXAS FEVER IN MONTANA.—Texas fever has appeared in Montana, according to the *Bad Lands Cowboy*, in which appears the following: "Near Bozeman, Montana, a herd of about one hundred cattle belonging to T. J. Carlin have been attacked by the disease, and twenty-one died up to the last of July. The herd has been quarantined and there is no danger of the disease spreading from it. The herd of Texas cattle which spread the disease is said to be on its way to the Territories, however, and will probably spread the disease widely unless stopped and quarantined. The herd is known by officials competent to act, and we look for immediate measures to be taken to stop it."

GLANDERS IN NEBRASKA.—Dr. T. S. Billings informs us that the State is literally rotten with this disease and that he has condemned fully twenty out of thirty horses in one farm only.

STAMPING OUT PLEURO-PNEUMONIA.—Veterinarians of the Bureau of Animal Industry have begun the work of stamping out the disease in Maryland and Virginia. Animals are appraised and paid for with the funds appropriated by Congress.

A DESERVED APPOINTMENT.—The Canadian Minister of Agriculture has appointed Prof. Andrew Smith, of the Toronto Veterinary College, to act as one of the judges at the Chicago Percheron Horse Show, Sept. 6 to 11. This completes the jury, the appointment of the Hon. George B. Loring, on the part of the United States, and the Marquis de la Motte Rogne having been previously announced in these columns. Dr. Loring and Prof. Smith are both excellent men for the place, and the French representative, from his position as Chief Inspector of the government studs, ought to be equally good; and a jury so appointed and so constituted will certainly be free from prejudice and partisan bias. The high character of the gentlemen themselves is a sufficient guaranty that their work will be honestly and intelligently done.—*Breeders' Gazette*.

PLEURO-PNEUMONIA AT THE QUARANTINE STATION IN QUEBEC.—The Department of Agriculture has received advices from the Dominion Live-Stock Inspector to the effect that the entire shipment of cattle recently made from Scotland to Canada, now in quarantine at Quebec, is afflicted with pleuro-pneumonia, and orders will be given that the entire lot be slaughtered and cremated at once. The shipment consisted of fifty-seven head of full-blood Galloways, owned by Hector McCrae, of Montreal, recently purchased at Kirkend, Brightshire, Scotland, and valued at \$15,000. There are also 300 other cattle belonging to Andrew Allan, of Montreal; J. J. Hill, of St. Paul, Minn.; Senator Cochrane, of Hillhurst, Canada, and W. Dawes, of Lachine, Quebec. Of this lot the greater part are black polled cattle, for which high figures were paid. The whole 357 head are valued at \$300,000. All must be sacrificed, as those not now down with the disease have been exposed during shipment. Since the exportation of these cattle has taken place pleuro pneumonia has broken out on the farms of the exporters, and the cattle have been slaughtered by the local authorities.—*National Live Stock Journal*.

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